



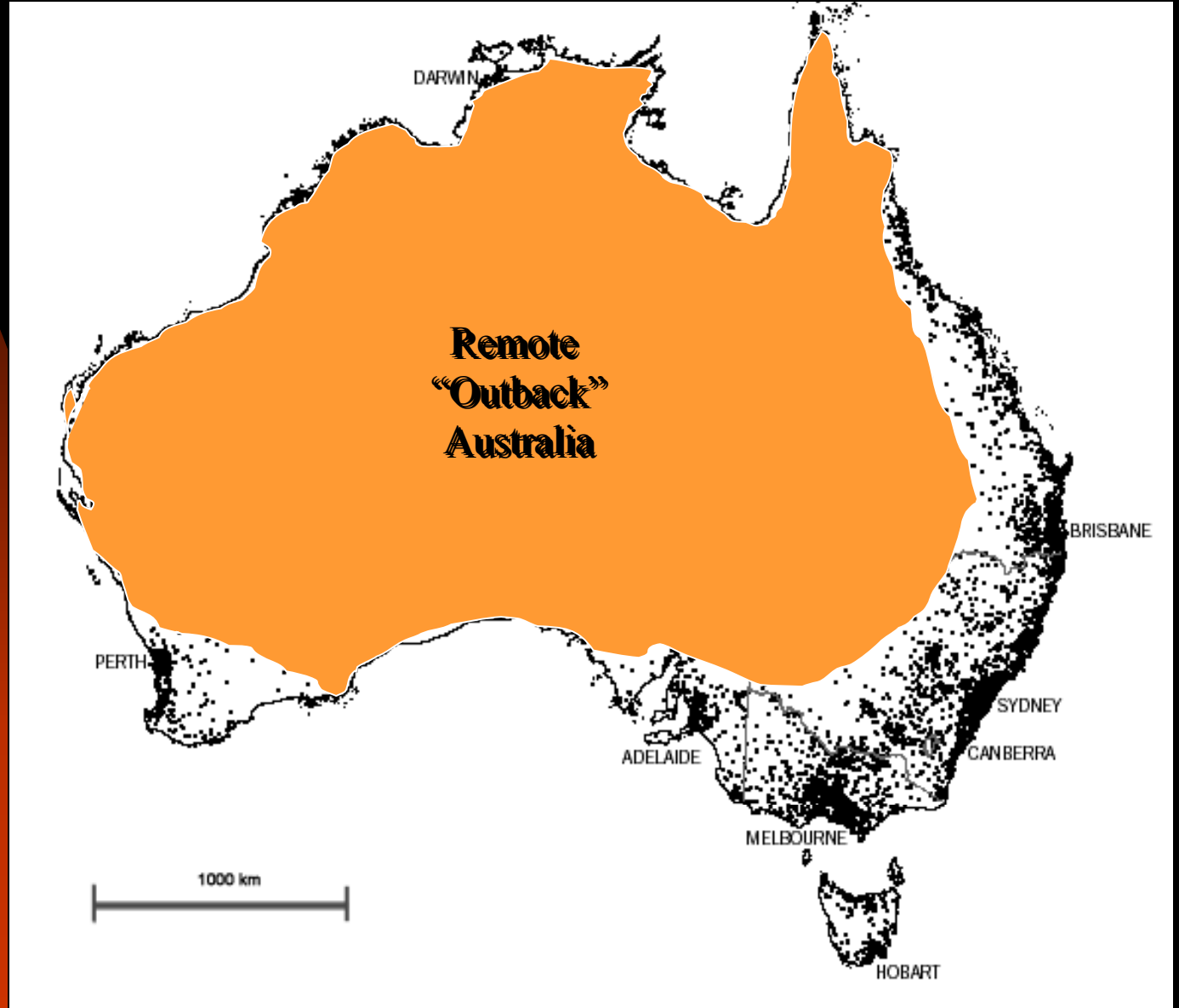
The Australian Bushlight Project

Light and Life in the Bush

Dr Bruce Walker
Centre for Appropriate Technology
Australia

Village Power Sustainability Workshop
Beijing, China
December 2002.

Distribution of the Australian Population

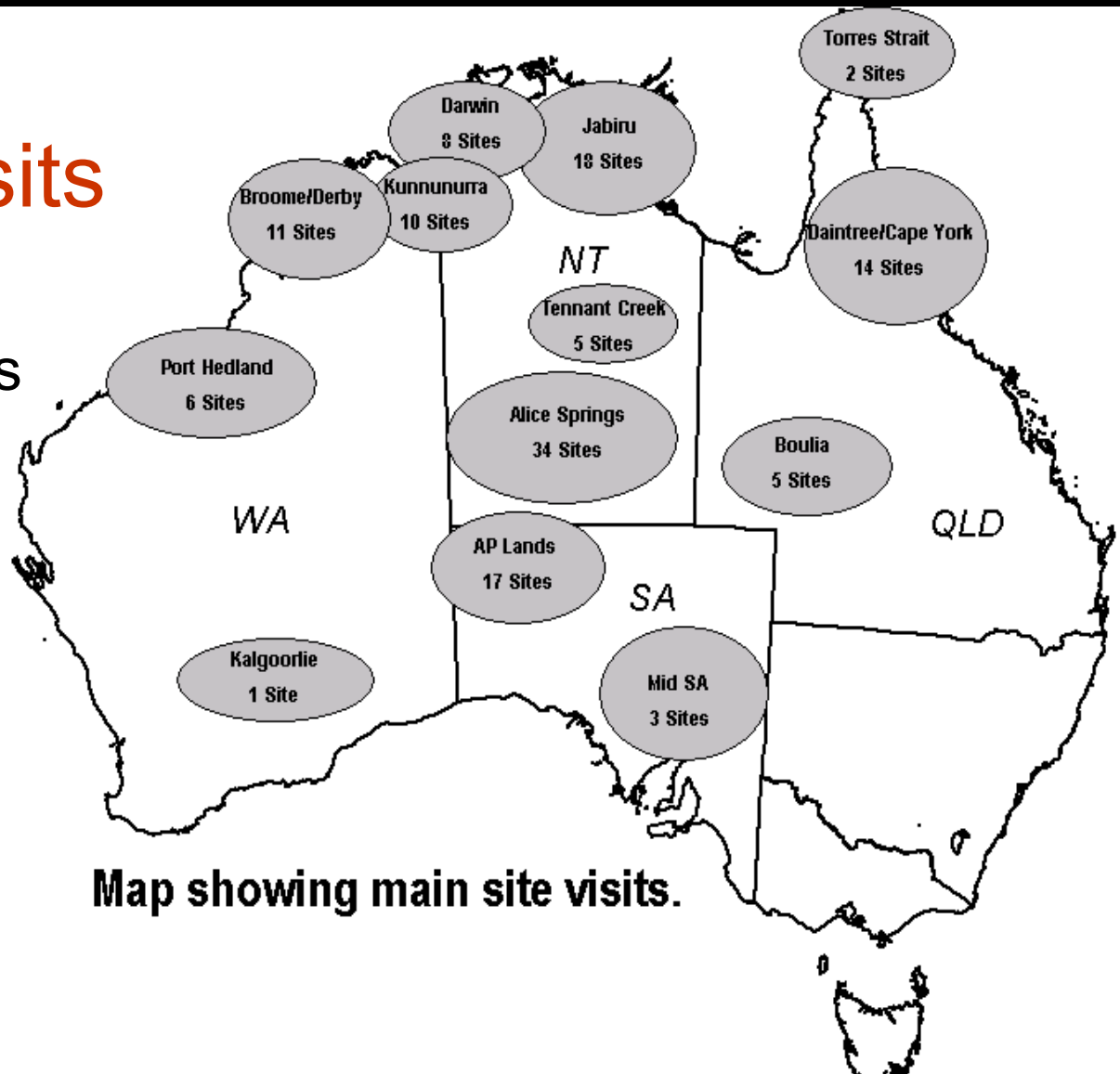


Renewable Energy Market Survey

Field visits

134 Sites

350 Systems



Map showing main site visits.

1216 Communities

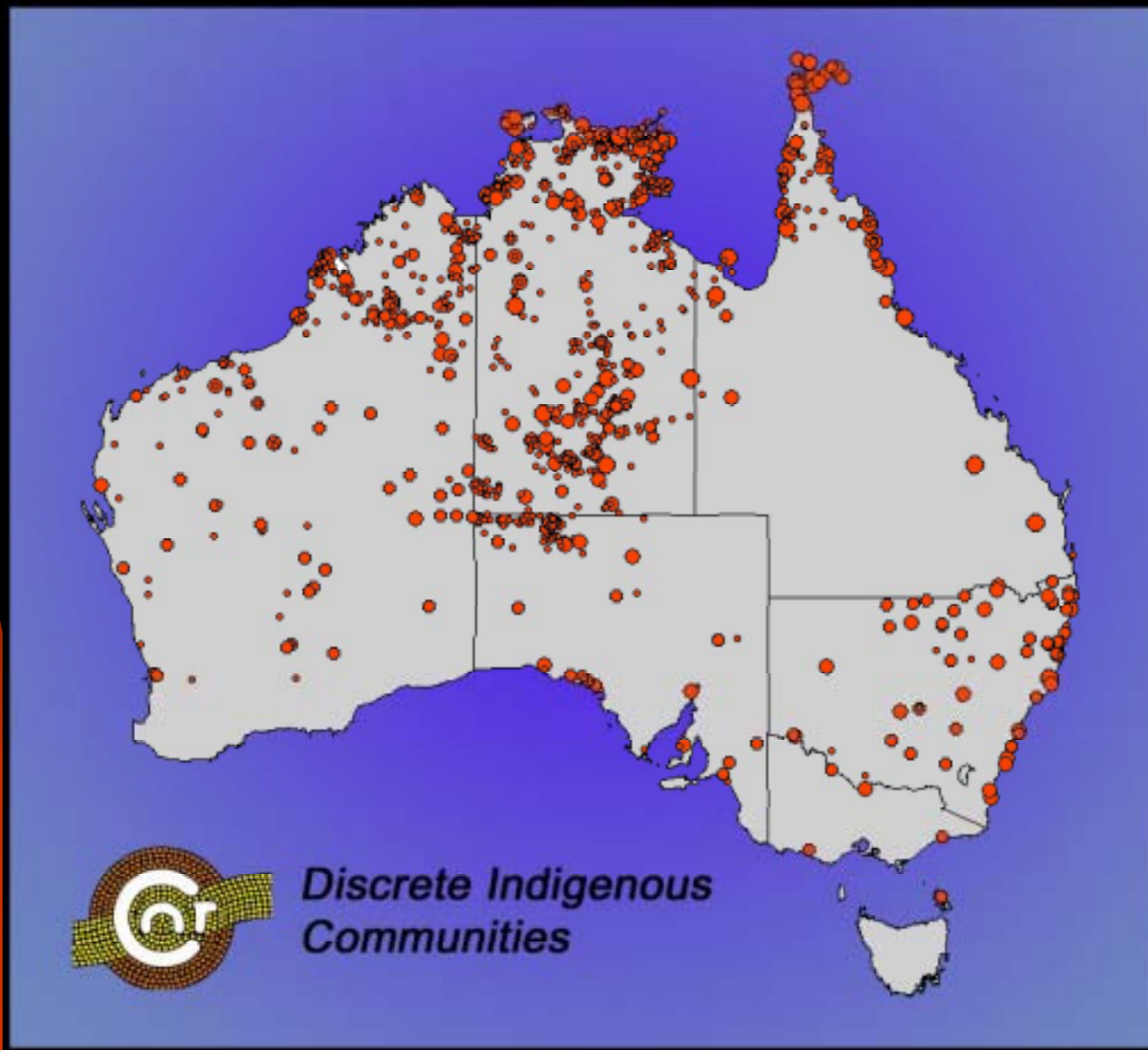
889 less than 50 people

17,000 houses

High unemployment

Reduced life expectancy

Chronic disease issues









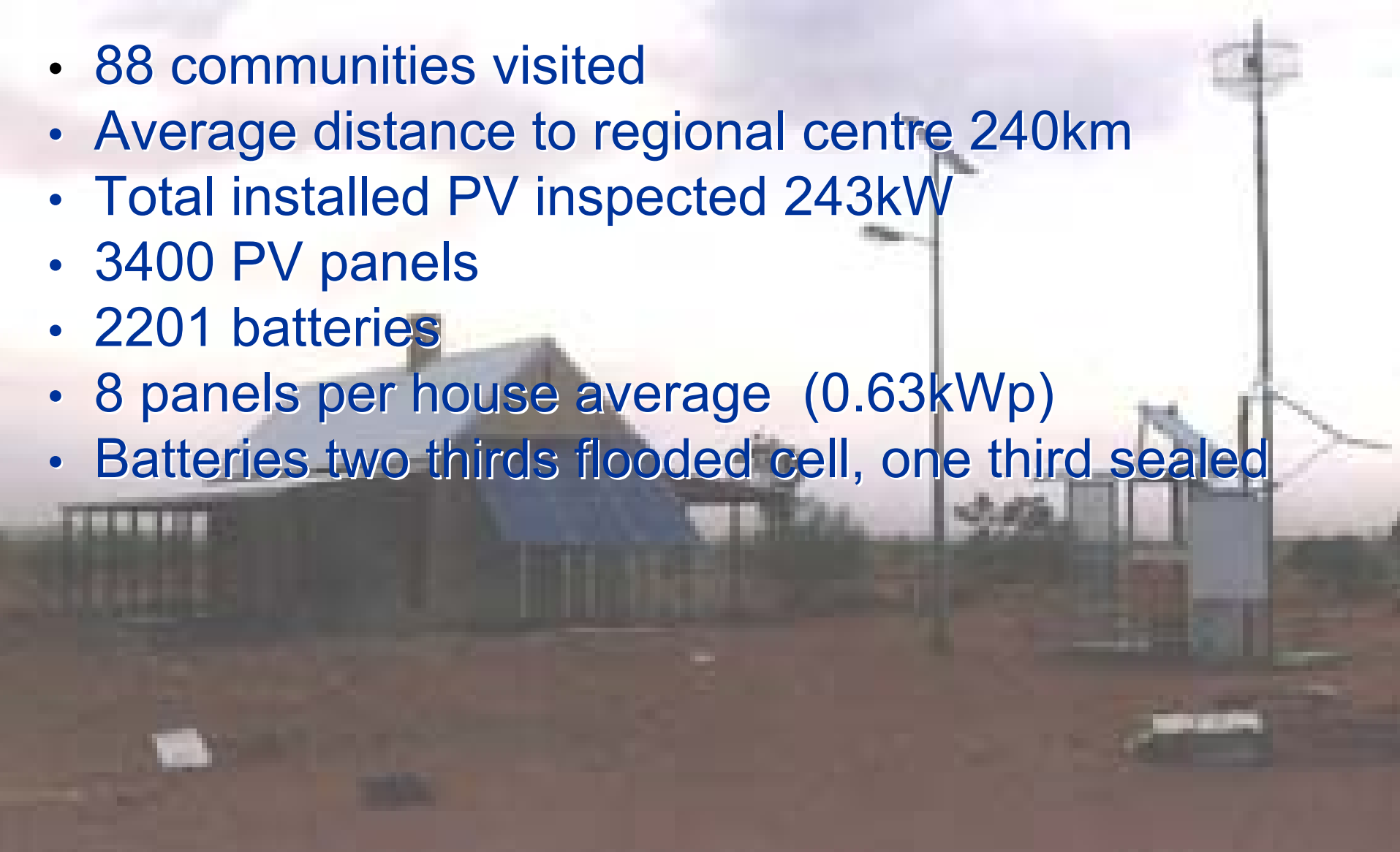
BUSH

LIGHT



Indigenous Experience with RE

- 88 communities visited
- Average distance to regional centre 240km
- Total installed PV inspected 243kW
- 3400 PV panels
- 2201 batteries
- 8 panels per house average (0.63kWp)
- Batteries two thirds flooded cell, one third sealed



Indigenous Experience with RE



Operational at time of visit

64%

Battery failure

28%

Inverter problems

16%

Control system difficulty

15%

Recent problems

61%

Vandalism and theft

9%

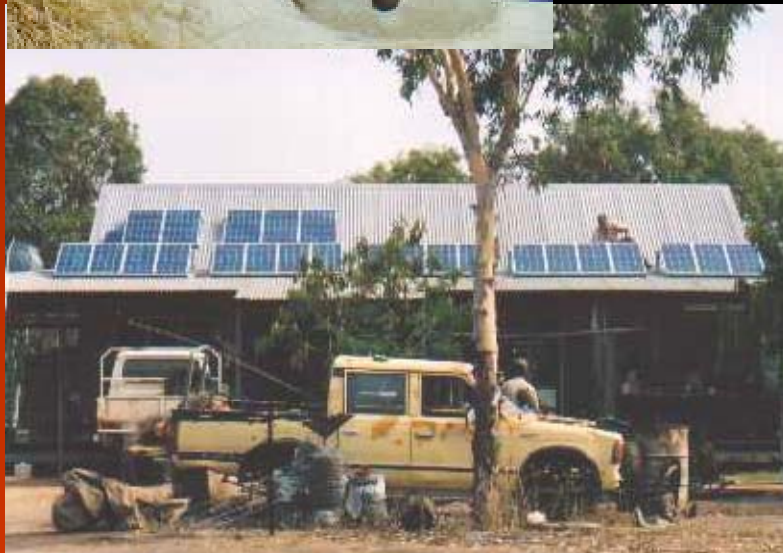


Indigenous Experience with RE



Satisfaction with RE system	40%
Insufficient power	36%
Recurrent problems	43%
Unsatisfactory maintenance	35%
Maintenance contract	26%
Trained personnel	8%
Energy awareness	2%

Renewable Energy



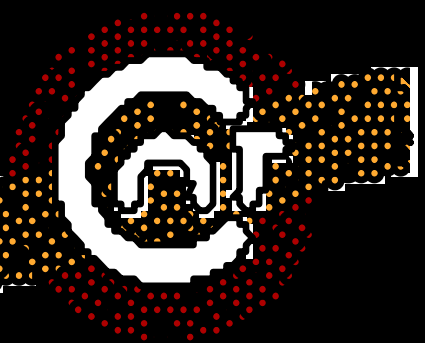
Transport Costs



Challenges for the future



- Reduce capital costs
- Increase reliability
- More trained personnel
- Effective backup for systems
- Better demand management
- Renewable energy is not 'free'



BUSH

LIGHT

Project Logic

GOAL

Improved livelihood choices for Indigenous people in Western Australia, Northern Territory, Queensland and South Australia

PURPOSE

To increase the access of remote communities of Indigenous people, to sustainable (affordable, consistent and reliable) renewable energy services

Bushlight

Unincorporated Joint Venture

- **CAT (Centre for Appropriate Technology)**
- **ACRE (Australian Centre for Renewable Energy)**
- **4 Year project, A\$24 million**
- **200 Communities, each less than 50 people**
- **Modular systems, integrated services**
- **Two thirds on technology, One third community support**
- **AGO and ATSIC Funding**

Project Components

1. BUSHLIGHT OPERATIONS

- *establish and manage an effective business organisation*

2. IMPROVED RENEWABLE ENERGY SYSTEMS

- *improve reliability and cost effectiveness of RE energy systems in target communities*

3. SHARED SERVICES

- *facilitate change and build the capacity and confidence needed to sustain RE services within target communities*

4. CAPITAL WORKS

- *RE systems in target communities*

Bushlight Operations



bushlight.org.au

Improved Supply Options

- A range of reliable systems for small communities
- ACRELab testing of components
- Raised industry awareness



Key Design Features



- Simplicity and low component counts
- User friendly interfaces
- Household systems
- Ease of maintenance
- Demand side management and appliances
- Onsite and remote monitoring

Quality and Testing

- Pre test components and systems
- Environmental durability
- Pre qualification and accreditation of suppliers and installers



Remote Monitoring and Data Collection

- Predict maintenance and reduce unscheduled maintenance
- Centralised data collection both technical and non technical
- Web based access to data

Community Support

Education & Information



Enhanced Livelihoods



Capacity Building

Community Education and Energy Information

- Understanding energy needs
- Advice on energy systems and uses
- People to talk to if you have problems



Capacity Building in Service Delivery

- Establish regional service teams to support RE systems
- Ongoing training and advice



Supporting Indigenous Livelihoods

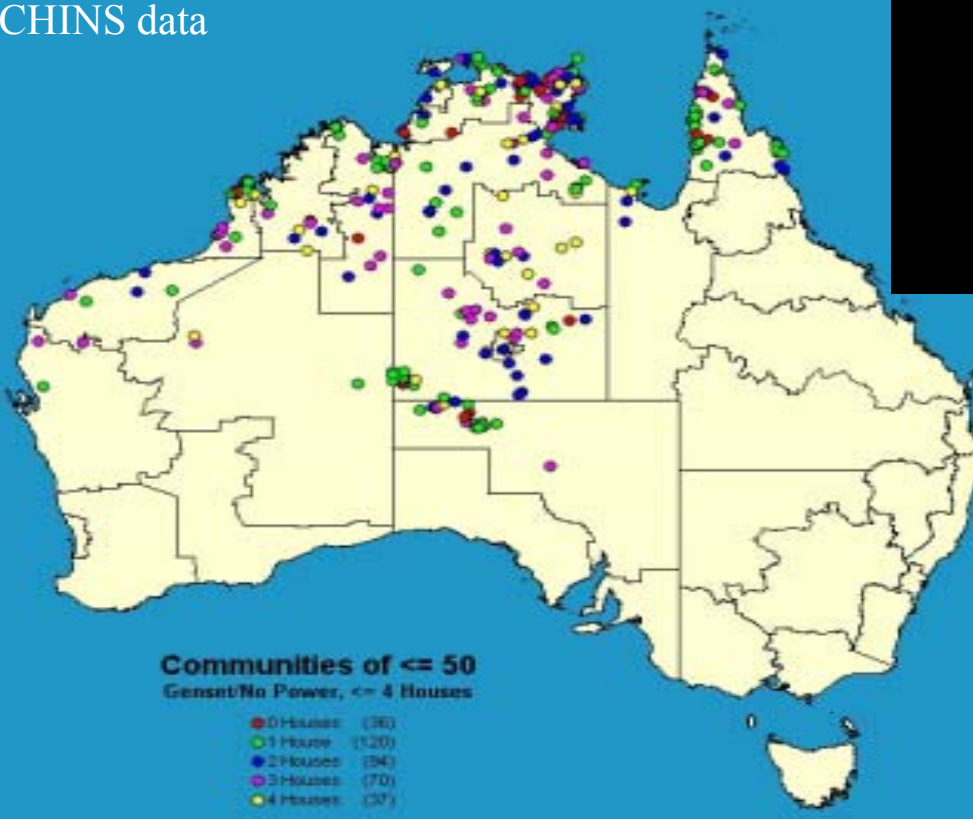
- Promoting sustainable integrated services networks
- Energy services that enhance livelihoods.



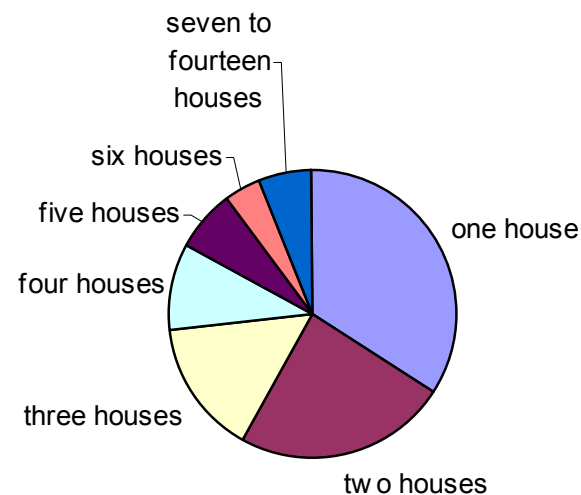
Small Community Focus

- Community selection through discussion with ATSIC Regional Councils & Communities

CHINS data



Number of eligible outstation communities with 1-7 houses



Sustainable Energy Services

- A holistic approach
- Energy services that meet the needs of people.



